Evaluation of AE 0172747 for weed control in field corn at Rochester, MN in 2006.

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The objective of this trial was to evaluate AE 0172747 for weed control in field corn in southeastern Minnesota. The research site was a Lawler loam series with a pH of 7.0 and soil test P and K levels of 61 ppm and 204 ppm, respectively. Spring fertilizer was spread ahead of planting on April 20, at a rate of 109-19-85-24 (N-P-K-S). The area was side dressed with an additional 30 lb/A of N on June 7. The field was chisel plowed, spring disked, and field cultivated once prior to planting. The corn hybrid NK N38B4, was planted on April 24, 2006 at a depth of 1.5 inches in 30 inch rows at 35,000 seeds per acre. A randomized complete block design was used with four replications. Preemergence (PRE) and postemergence (POST) treatments were applied with a tractor-mounted sprayer delivering 20 gpa at 32 psi using Turbo Tee 11002 nozzles. Evaluations of the plots were taken on May 23, May 30, June 9, and June 27. Application dates, environmental conditions, and weed stages are listed below. The center two rows of each plot were harvested on November 2, 2006.

Date	April 25	May 24	May 31
Treatment	PRE	POST I	POST II
Temperature (F)			
air	0	74	77
soil	57	70.7	71.6
Relative Humidity (%)	32	63	40
Wind (mph)	14	26	14
Soil moisture	adequate	dry	dry
Corn			
stage	--	V2	4 collar
height (inch)	--	3.5	7.0
Giant Ragweed			
weed density (ft^2)	--	19.6	19.6
height (inch)	--	2.9	11.5
Common Lambsquarters			
weed density (ft^2)	--	9.9	9.9
height (inch)	--	1.7	3.0
Common Waterhemp			
weed density (ft^2)	--	147	147
height (inch)	--	0.4	0.8
Woolly Cupgrass			
weed density (ft^2)	--	91.1	91.1
height (inch)	--	1.9	3.8
Rainfall after each application (inch)			
week 1	1.02	0.35	0.41
week 2	0.09	0.41	2.13
week 3	1.36	2.13	0.26

CONCLUSIONS

The **PRE / POST II** program with Define followed by AE 0172747 + AAtrex provided similar giant ragweed and common lambsquarters control and superior common waterhemp control then Define followed by Liberty + AAtrex. However, Liberty + AAtrex provided greater woolly cupgrass control than AE 0172747 + AAtrex, 92 compared to 80%, by the June 27 rating.

POST I herbicide programs with AE 0172747 at the 3 oz rate tank mixed with Accent, AAtrex or Resolve resulted in similar giant ragweed, common lambsquarters and common waterhemp control. However, the tank mix of AE 0172747 + AAtrex provided better woolly cupgrass control, 49%, then when tank mixed with Resolve, 33%. The best woolly cupgrass control, 75%, was achieved with a tank mix of Liberty + Resolve, however this same tank mix resulted in the lowest common lambsquarters control. When comparing the POST I application of AE 0172747 + Resolve to Liberty + Resolve, the tank mix with AE 0172747 provided superior common lambsquarters control, but inferior woolly cupgrass control.

POST II applications of Liberty + AE 0172747 at the 1 oz rate compared favorably with Liberty + AAtrex and with Liberty + AAtrex + AE 0172747 for giant ragweed and woolly cupgrass control. Common lambsquarters and common waterhemp control however, was reduced without the presence of AAtrex in the tank mix.

Based on this study, it appears that AAtrex should be included with AE 0172747 to aid in the control of difficult to control broadleaf weeds such as common lambsquarters and common waterhemp. AE 0172747 also appears to be antagonistic with the ALS grass herbicides Accent and Resolve for woolly cupgrass control in the study. Higher rates of ALS chemistry may be required to overcome this antagonism. (University of Minnesota Extension Service, Regional Center, Rochester, MN).

Table. Performance of AE 0172747 for weed control in field corn on May 23, May 30, June 9, and June 27 at Rochester, MN in 2006.

Treatment	Rate	Giant ragweed control				Common lambsquarters control				Common waterhemp control				Woolly cupgrass control				Corn yield
		5/23	5/30	6/9	6/27	5/23	5/30	6/9	6/27	5/23	5/30	6/9	6/27	5/23	5/30	6/9	6/27	
	(rate/A)	(%)				(%)				(%)				(%)				(bu/A)
Untreated Check		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
PRE / POST II																		
Define / AE 0172747 + AAtrex + Agri-Dex COC + UAN 28%	12 oz / 3 oz + 8.9 oz + 1% v/v + 1.5 qt	0	0	93	97	43	29	95	95	91	78	94	84	79	85	96	80	139
Define / Liberty + AAtrex + AMS	12 oz / 32 oz + 8.9 oz + 3.4 lb	0	0	92	93	38	30	91	92	91	79	94	72	80	83	97	92	126
POST I																		
AE 0172747 + Accent + Destiny MSO + UAN 28%	3 oz + 0.25 oz + 2.4 pt + 1.5 qt	0	85	98	92	0	93	99	98	0	60	95	76	0	60	73	40	138
Steadfast + AAtrex + Callisto + Agri-Dex COC + UAN 28%	0.75 oz + 8.9 oz + 1.5 oz + 1% v/v + 1.5 qt	0	96	96	90	0	99	99	98	0	69	95	87	0	61	77	64	160
AE 0172747 + AAtrex + Destiny MSO + UAN 28%	3 oz + 8.9 oz + 2.4 pt + 1.5 qt	0	97	95	87	0	97	99	98	0	84	95	80	0	86	82	54	155
AE 0172747 + Resolve + Destiny MSO + UAN 28%	3 oz + 1 oz + 2.4 pt + 1.5 qt	0	82	96	86	0	75	99	97	0	60	93	74	0	65	63	33	114
Liberty + Resolve + AMS	32 oz + 1 oz + 3.4 lb	0	96	93	81	0	93	84	75	0	89	86	70	0	95	96	75	118
POST II																		
Liberty + AE 0172747 + AMS	32 oz + 1 oz + 3.4 lb	0	0	94	94	0	0	66	84	0	0	63	20	0	0	94	86	28
Liberty + AAtrex + AMS	32 oz + 8.9 oz + 3.4 lb	0	0	91	92	0	0	78	95	0	0	73	26	0	0	97	76	93
Liberty + AE 0172747 + AAtrex + AMS	32 oz + 1 oz + 8.9 oz + 3.4 lb	0	0	95	94	0	0	92	97	0	0	79	39	0	0	95	77	63
Roundup WeatherMax + AE 0172747 + AMS	22 oz + 1 oz + 3.4 lb	0	0	78	93	0	0	63	91	0	0	74	51	0	0	99	59	116
LSD (P=0.10)		**0**	**2**	**3**	**5**	**2**	**4**	**4**	**3**	**1**	**4**	**4**	**6**	**2**	**4**	**2**	**11**	**30**